

***Amendments To The Claims:***

Please amend the title on page 1 to read:

---GAS OR LIQUID FLOW SENSOR---

### ***Amendments To The Claims:***

This listing of claims replaces all prior versions, and listings, of claims.

### ***Listing of Claims:***

1. (currently amended) A gas or liquid flow sensor for detecting movement of air, comprising:
  - a) —a flexible substrate;
  - b) —a flexible transducer affixed to the substrate, ~~the transducer comprising a first end and a second end; and~~
  - c) —a first and second electrical contacts in electrical communication with ~~the first end~~ of the transducer;
  - d) —a second electrical contact in electrical communication with the second end of the transducer;
  - e) —a protective covering placed over at least a portion of at least one of the ~~transducer, first electrical contact and second electrical contact; and~~
  - f) —wherein the substrate is displaceable in a presence of ~~displaced when positioned in~~ a stream of moving gas or liquid air, ~~the displacement of the substrate causing flexure of the~~ transducer and a changing the electrical value of the transducer.
2. (currently amended) A sensor according to claim 1 wherein ~~at the~~ protective covering substantially covers at least a portion of the flexible transducer.
3. (currently amended) A sensor according to claim 1 wherein the gas is ~~air, protective covering substantially covers the flexible transducer and the first and second~~ electrical contacts.

4. (canceled).
5. (original) A sensor according to claim 1 wherein the flexible transducer comprises a resistive ink.
6. (currently amended) A sensor according to claim 1, further comprising at least one flexible lead formed on ~~integral to~~ the substrate.
7. (canceled).
8. (currently amended) A sensor according to claim 1 wherein;
- a) ~~the flexible substrate comprises a first side and a second side;~~
- b) ~~the first and second electrical contacts are affixed to~~ the first side of the flexible substrate; and
- e) ~~a third electrical contact is affixed to the second side of the flexible substrate, aligned with the first electrical contact, said third electrical contact being~~ and is in electrical communication with the first electrical contact; ~~and~~
- d) ~~a fourth electrical contact is affixed to the second side of the flexible substrate, aligned with the second electrical contact, and is in electrical communication with the second electrical contact.~~
9. (canceled).
10. (canceled).
11. (currently amended) A sensor according to claim 1, disposed in a device for detecting inhalation ~~further comprising an air inlet covering portion.~~

12. (canceled).

13. (canceled).

14. (currently amended) A sensor according to claim ~~143~~ wherein at least one of the first and second electrical contacts are affixed to the mounting portion of the flexible substrate.

15. (currently amended) A sensor according to claim 1 wherein the electrical value of the flexible transducer changes relative in proportion to the flexure of the flexible substrate.

16. (currently amended) A sensor according to claim 1 wherein the flexible substrate substantially retains to an original orientation when a bending force impinging electrical value of the flexible transducer changes from a lower electrical value to a higher electrical value when the flexible substrate is removedflexed.

17. (original) A sensor according to claim 1 wherein the flexible substrate is made of polyimide.

18. (currently amended) A sensor according to claim 1 wherein the sensor forms at least a portion of a one-way valve in a stream of moving gasair such that the sensor acts as a one-way valve.

19. (currently amended) A sensor for detecting inhalation, comprising:

a) —a flexible substrate;

b) —a flexible transducer affixed to the substrate, ~~the transducer comprising a first end and a second end; and~~

e) ~~—— a first and second electrical contacts in electrical communication with the first end of the transducer;~~

d) ~~—— a second electrical contact in electrical communication with the second end of the transducer;~~

e) ~~—— a protective covering placed over at least a portion of at least one of the transducer, first electrical contact and second electrical contact; and~~

f) ~~—— wherein the substrate is displaceable in the presence of displaced when positioned in a stream of moving air caused by inhalation, the displacement of the substrate causing flexure of the transducer and changing the electrical value of the transducer.~~

20. (currently amended) A sensor according to claim 19 wherein ~~the~~ protective covering substantially covers at least a portion of the flexible transducer.

21. (currently amended) A sensor according to claim 20~~19~~ wherein the protective covering substantially covers the flexible transducer and the first and second electrical contacts.

22. (original) A sensor according to claim 19 wherein the flexible transducer comprises a resistive ink.

23. (canceled).

24. (canceled).

25. A sensor according to claim 19 wherein:

a) ~~—— the flexible substrate comprises a first side and a second side;~~

b) ~~the first and second electrical contacts are affixed to the first side of the flexible substrate;~~

e) ~~a third electrical contact is affixed to the second side of the flexible substrate, said third electrical contact aligned with the first electrical contact, and is in electrical communication with the first electrical contact; and~~

d) ~~a fourth electrical contact is affixed to the second side of the flexible substrate, aligned with the second electrical contact, and is in electrical communication with the second electrical contact.~~

26. (canceled).

27. (canceled).

28. (original). A sensor according to claim 19, further comprising an air inlet-covering portion.

29. (original) A sensor according to claim 19, further comprising a mounting portion.

30. (original) A sensor according to claim 29 wherein the first and second electrical contacts are affixed to the mounting portion.

31. (currently amended) A sensor according to claim 19 wherein the electrical value of the flexible transducer changes relative ~~in proportion~~ to the flexure of the flexible substrate.

32. (canceled).

33. (canceled).

34. (currently amended) A sensor according to claim 19 disposed in a device for delivering medication, the device comprising~~for detecting movement of air, comprising:~~

- a) ~~an airway having an air inlet; a flexible substrate;~~
- b) ~~at least a portion of the sensor positioned in the airway; at least one flexible lead integral to the substrate;~~
- e) ~~a reservoir for containing medication; a flexible resistive ink transducer affixed to the flexible lead, the transducer comprising a first end and a second end;~~
- d) ~~a dispensing apparatus connected to said reservoir; and a first electrical contact in electrical communication with the first end of the transducer;~~
- e) ~~a controller electrically connected to the sensor and the dispensing apparatus a second electrical contact in electrical communication with the second end of the transducer;~~
- f) ~~a protective covering placed over at least a portion of at least one of the transducer, first electrical contact and second electrical contact; and~~
- g) ~~wherein the substrate is displaced when positioned in a stream of moving air, the displacement of the substrate causing flexure of the transducer and changing the electrical value of the transducer.~~

35. (withdrawn) A device for delivering medication, comprising:
- a) an air inlet;
  - b) an airway in pneumatic communication with the air inlet;
  - c) a sensor for detecting movement of air, the sensor being positioned in the airway proximate the air inlet such that the sensor is effective to selectively close the air inlet;
  - d) a reservoir for containing medication;

- e) a pump/valve in pneumatic communication with the reservoir;
- f) an aerosolation spray means in pneumatic communication with the pump/valve;
- g) a mouthpiece in pneumatic communication with the airway and the aerosolation spray means;
- h) an electrical power supply;
- i) a controller portion in electrical communication with the power supply, sensor, pump/valve and aerosolation means; and
- j) wherein:
  - i) air flowing into the airway from the air inlet displaces the sensor, changing the electrical value of the sensor;
  - ii) the controller portion detects the change in electrical value of the sensor and actuates the pump/valve;
  - iii) the pump/valve urges medication to flow from the reservoir to the aerosolation means;
  - iv) the aerosolation means aerosolizes the medication; and
  - v) wherein the air flowing into the airway is combined with the aerosolized medication in the mouthpiece for delivery to a patient.

36. (withdrawn) A device according to claim 35 wherein the sensor is placed in electrical communication with the controller portion by means of at least one rivet.

37. (withdrawn) A device according to claim 35 wherein the sensor is placed in electrical communication with the controller portion by means of conductive adhesive.



38. (withdrawn) A device according to claim 35, further comprising an air shield positioned proximate the sensor to direct the air flowing into the airway from the air inlet toward the sensor.

39. (withdrawn) A device according to claim 35 wherein the sensor cooperates with the air inlet to act as a one-way valve.

40. (withdrawn) A device for delivering medication, comprising:

- a) an air inlet;
- b) an airway in pneumatic communication with the air inlet;
- c) a sensor for detecting movement of air, the sensor being positioned in the airway proximate the air inlet such that the sensor is effective to selectively close the air inlet;
- d) a reservoir for containing medication;
- e) a pump/valve in pneumatic communication with the reservoir;
- f) an electrohydrodynamic aerosolation spray means in pneumatic communication with the pump/valve;
- g) a mouthpiece in pneumatic communication with the airway and the electrohydrodynamic aerosolation spray means;
- h) an electrical power supply;
- i) a controller portion in electrical communication with the power supply, sensor, pump/valve and electrohydrodynamic aerosolation means; and
- j) wherein:
  - i) air flowing into the airway from the inlet displaces the sensor, changing the electrical value of the sensor;

ii) the controller portion detects the change in electrical value of the sensor and actuates the pump/valve;

iii) the pump/valve urges medication to flow from the reservoir to the electrohydrodynamic aerosolation means;

iv) the electrohydrodynamic aerosolation means aerosolizes the medication; and

v) wherein the air flowing into the airway is combined with the aerosolized medication in the mouthpiece for delivery to a patient.

41. (withdrawn) A device according to claim 40 wherein the sensor is placed in electrical communication with the controller portion by means of at least one rivet.

42. (withdrawn) A device according to claim 40 wherein the sensor is placed in electrical communication with the controller portion by means of conductive adhesive.

43. (withdrawn) A device according to claim 40, further comprising an air shield positioned proximate the sensor to direct the air flowing into the airway from the air inlet toward the sensor.

44. (withdrawn) A device according to claim 40 wherein the sensor cooperates with the air inlet to act as a one-way valve.

45. (new) A device according to claim 34 wherein said dispensing apparatus comprises an electrodynamic aerosolation apparatus.